UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/350,168	11/30/94	YAMAZAKI	0756114E

EXAMINER	
ART UNIT	PAPER NUMBER
2515	11

ESM1/0819

SIXBEY FRIEDMAN LEEDOM & FERGUSON
2010 CORPORATE RIDGE
SUITE 600
MCLEAN VA 22102

DATE MAILED: 08/19/96

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☒ Responsive to communication filed on _____ ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), — days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☒ Notice of References Cited by Examiner, PTO-892.
2. ☐ Notice of Draftsman's Patent Drawing Review, PTO-948.
3. ☐ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ _____.

Part II SUMMARY OF ACTION

1. ☒ Claims 1-31 are pending in the application.

   Of the above, claims _____ are withdrawn from consideration.

2. ☒ Claims 8 have been cancelled.

3. ☐ Claims _____ are allowed.

4. ☒ Claims 1-7, 9-31 are rejected.

5. ☐ Claims _____ are objected to.

6. ☐ Claims _____ are subject to restriction or election requirement.

7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____. has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).

12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____ ; filed on _____.

13. ☐ Since this application apppears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

8/350,168

EXAMINER'S ACTION

PTOL-326 (Rev. 2/93)

RESPONSE TO AMENDMENT

1. Applicants' After Final Response dated July 30, 1996, has been received.

2. Part of Applicants' arguments in the After Final Response is persuasive; therefore, the finality of the previous Office Action is withdrawn and replaced by the following final rejection.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Specification

4. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification stands objected to under 35 U.S.C. § 112, first paragraph, as the specification, as originally filed, does not provide support for the invention as is now claimed.

The claiming of an electric device having a *single crystalline* IC chip for the controlling the drive circuit in claims 1-10,13,16-27,30,31 is not supported in the specification as originally filed.

Remarks: Applicants contended on pg 2 of the After Final Response:

> *With respect to the IC chip, on page 1 of the specification, beginning with the third full paragraph, an active matrix type liquid crystal display is discussed as having an active matrix circuit formed by using TFTs and its driving circuit constructed by a single crystalline semiconductor integrated circuit of an external type. As discussed at other locations in the specification, the present invention is used with external IC chips of this type (see page 10, fourth full paragraph; page 15, first full paragraph; page 22, third full paragraph). Therefore, the above recitation of an active matrix circuit having a non-single crystalline TFT, a driving means having a non-single crystalline TFT, and a single crystalline IC chip is supported by the specification and reconsideration is respectfully requested.*

A review of the sections of the specification as pointed out by Applicants shows:

a. Pg. 1, 3rd full parag. and beyond, describes a related prior art in which a display has an *active matrix circuit* with TFTs and its *driving circuit* constructed by a *single crystalline* semiconductor IC chip (with no mentioning of a control means and/or its material). Such structure is exactly shown in cited reference Nagae, and provides no support to the claimed structure of an *active matrix and driving means* of a *non-single crystalline* semiconductor type, and a *control means* of a *single crystalline* semiconductor type.

b. Pg. 10, 4th full parag. and beyond, mentions in passing the use of an external IC chip and methods for adhering such IC chip to the TFT active matrix circuit, and it does not teach a control means of a single crystalline semiconductor type along with non-single crystalline active matrix circuit and driving circuit as claimed.

c. Pg. 15, 1st full parag. and beyond, describes a device fabrication method in which a peripheral logic circuit is formed along with the active matrix circuit on a single

substrate of amorphous silicon that was crystallized. It can only be assumed that the peripheral logic circuit is referring to the control means for the driving circuit. Again, there is no specific mentioning of a *control means* of a *single crystalline* type along with *non-single* crystalline *active matrix circuit and driving circuit* as claimed.

d. Pg. 22, 3rd full parag. and beyond, describes a device comprising an active matrix circuit being made of amorphous silicon TFTs and a peripheral circuit using crystalline silicon TFTs being formed on one substrate. Once again, there is no specific mentioning of a *control means* of a *single crystalline* type along with *non-single* crystalline *active matrix circuit and driving circuit* as claimed.

Claim Rejections - 35 USC § 112

5. Claims 1-10,13,16,17-20-27,30,31 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons set forth in the objection to the specification, i.e. they contain new matter.

Claim Rejections - 35 USC § 102

6. Claims 14,15,29 are rejected under 35 U.S.C. § 102(e) as being anticipated by canceled Spitzer'550.

The above claims are anticipated by Spitzer's figs. 1, 7A-7D, and accompanying text which disclose a and LCD device comprising:

- an insulating glass substrate (14) (col. 3, lines 63+);

- an active matrix circuit (25) including TFTs which can be of a polycrystalline Si type (col. 8, lines 11+);

- driving means (18,20) with TFTs which can be of a polycrystalline Si type (col. 8, lines 11+); the TFTs of both the driving means and the active matrix circuit inherently have the same structure;

- control means (40) being connected with the driving means by conductive interconnections, i.e. wire bonding; wherein the active matrix circuit, driving means, and control means are all formed on the insulating glass substrate.

Claim Rejections - 35 USC § 103

7. Claims 11,12,28 are rejected under 35 U.S.C. § 103 as being unpatentable over canceled !!!
Spitzer'550 in view of Mase'156.

Regarding the above claims Spitzer discloses the claimed invention except for the control means being connected with the driving means by COG. Mase's fig.2 discloses the use of the COG method to connect an IC chip to an LCD glass substrate. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Spitzer's LCD device by connecting the control logic circuits (40) to the driving circuits on the display glass substrate by the COG method as disclosed by Mase'156 because

such method is one of the many conventional methods for interconnecting circuitries available in the art (as pointed out by Mase's col.1, lines 25-58).

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tiep Nguyen whose telephone number is (703) 305-3496.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1615.

William L Sikes

WILLIAM L. SIKES
SUPERVISORY PATENT EXAMINER
GROUP 2500